Bay of Fundy: DRAFT table 1 of 2 May 19, 2000

POTENTIAL MANAGEMENT OPTIONS	LEGAL AUTHORITIES	INFORMATION NEEDS and /or INFORMATION AVAILABLE	R & D: ONGOING and R&D NEEDED	LIMITATIONS and CONSIDERATIONS				TIME-FRAME
				ECONOMIC IMPACTS ON SHIPPING INDUSTRY & PORT COMMUNITY	ENVIRONMENTAL IMPACTS	POTENTIAL BENEFITS to RIGHT WHALES	IMPLEMENTATION and OPERATING COSTS	
Shift shipping lanes away from highest concentration area.	Must seek IMO approval to amend; domestic authority exists.	Information on right whale distribution within the conservation area and shipping lanes as a function of level of survey effort has been developed and is under study.	Several research groups are studying passive acoustic detection systems in Bay of Fundy.	Ability to shift lanes is dependent on impact on local fisheries and impact on navigation safety.	Ability to shift lanes is dependent on impact on local fisheries and other marine resources, and impact on navigation safety.	Shifting vessel traffic away from historic high whale locations within the conservation area will reduce the risk of collision.	Shifting shipping lanes would require charting and notification in Sailing Directions and US Coast Pilot and other publications. This would be overseen by the Canadian Coast Guard operated VTS in the Bay of Fundy.	On completion of the ongoing and discussions, the proposal would take approximately one year to develop and be approved by IMO. The Canadian government would then have at least six months to implement. This proposal faces face the following obstacles:
Line shipping lanes with acoustic deterrents and/or equip vessels with acoustic deterrents.	Vessel equipment standards would require IMO approval	We do not know the potential consequences of displacing target animals or on non-target animals (e.g. porpoises).	A preliminary study on acoustic deterrence in the Bay of Fundy is being conducted by WHOI in the summer 2000.	Cost estimates to equip vessels must be developed.	Several conservation groups have raised concerns about introducing an acoustic deterrent in the Bay of Fundy as this could adversely impact one of the right whales' primary habitats as well as other creatures.	Unknown. There are many questions about the feasibility and the approach that are undefined and unanswered. There is no evidence from other baleen whales to suggest that acoustic deterrents would be effective.	Costs for acoustic detection are under study and will be considered in the December 2000 acoustics workshop.	Acoustic deterrence is an unknown. Vessel equipment standards would require IMO approval, a long process.

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				ECONOMIC IMPACTS ON SHIPPING INDUSTRY & PORT COMMUNITY	ENVIRONMENTAL IMPACTS	POTENTIAL BENEFITS to RIGHT WHALES	IMPLEMENTATION and OPERATING COSTS	
Develop an emergency rulemaking process to impose restrictions on vessels to issue an emergency rule to route traffic around known right whale locations or to slow traffic to "slow safe speed" if a vessel is unable to divert around known right whale locations, in particular if a whales are sighted in designated shipping lanes. Require that engines be ready for maneuvering.	Uncertain. Will require legal review	There is no dedicated survey effort for shipping management. The Bay of Fundy is subject to long periods of fog, which would limit the effectiveness of an aerial surveillance system.	Additional information is needed on right whale/vessel interactions as a function of speed and vessel type. Computer simulation models are being developed. Several research groups are studying passive acoustic detection systems in Bay of Fundy.	Ability to reroute vessels or slow vessels on an emergency basis is dependent on impact on local fisheries and impact on navigation safety.	Ability to reroute vessels or slow vessels on an emergency basis is dependent on impact on local fisheries and impact on navigation safety.	Restricting vessel operations within the conservation area when whales are found in the shipping lanes may reduce the risk of collision. However, this is highly dependent on the ability to sight and /or detect whales. Fog and current technology severely limit the potential benefit of this option. Increasing the vessels' ability to maneuver will reduce the risk of collision	Aerial surveillance is expensive. To issue an emergency rule, a consultative process with industry, scientists, provincial agencies, and conservation groups should be established.	An estimate cannot be provided at this time to institute an emergency management regime in the Bay of Fundy.